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PRINCIPLES AND PRACTICE OF ECONOMIC PLANNING IN CHINESE INDUSTRY

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[Summary: This report contains information on the following aspects of economic planning in industrial enterprises in China: production, materials, labor, costs, finances, capital construction, and inspection and supervision.

Such factors as quotas, wage scales, a receipts and disbursements balance sheet, working capital, depreciation, and construction costs are also discussed.]

A. Introduction

1. The development of the idea of a planned economy accompanied and followed the Bolshevist revolution, and it has undergone many vicissitudes. For China, the basic tasks of economic planning are:

a. To assure the independence of the people's economy, get rid of foreign capitalistic restrictions, and repel the encroachments of capitalistic nations.

b. To fortify the achievements of the people's government, so that each element of the economy may accomplish its proper function under national economic leadership and develop along prescribed lines.

c. To assure uninterrupted and balanced production on an expanding scale.

d. To abolish detached and unregulated production.

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The economy of the New Democracy is a planned economy in which cycles of economic crises and panic will be avoided. Implementation of a planned economy in a New Democracy country is different to implementation in a country with a socialist government. In the latter, the government exercises full and direct control; in the former, where there is joint public-private ownership, the planning and direction may be said to be indirect. The economy of a New Democracy country is one that is in transition, constantly moving in the direction of socialism, and as state domination increases, private control and private profits diminish and finally disappear altogether. As time goes on, the extent of government planning in the direction and control of industrial enterprises will increase.

2. Planning for industry is an organic part of the planning for the national economy. It is the economic foundation for strengthening the position of leadership of the industrial workers in the people's government.

B. Steps in the Economic Planning of an Industry

There are six categories of plans involved, those having to do with finances, capital construction, costs, supply of materials, labor, and production; the last four lie in the field of production planning.

Planning for next year's operations should start in the middle of the third quarter of this year, in order to settle a number of objectives well in advance. For a particular enterprise, there are two principal kinds of objectives:

a. Those pertaining to quantities, which include the number of employees, amount of the payroll, quantities of raw materials and fuel, etc. These afford a roughly comprehensive idea as to what is involved in the contemplated operations. Then consideration should be given to such questions as whether the payroll is too great or too small, and the proportion of management to laborers. In a light industry, the proportion is usually 15 percent of the former and 85 percent of the latter. If estimates depart from this usual standard, the reason must be determined.

b. Those pertaining to qualities which include such considerations as productivity and average wage of labor, waste of materials, cost of particular operations, speed of turnover of operating capital, allocations restricting use of working capital, etc.

These objectives must be considered in the light of current and prospective economic conditions, and conclusions should be summarized in a statement to be submitted to higher levels for examination and decisions. Such a statement should contain a number of sections, such as:

a. An analysis of the experiences in production during the preceding period. For instance, the losses sustained and the reasons therefor.

b. An analysis of the work quotas and how improvements might be realized. For instance, a certain factory formerly produced 4 percent of inferior quality cloth, but reduced that to one percent; why was it not possible to reduce the ratio of inferior cloth still further?

c. A study of the good points of the best workers; and a summary of the constructive suggestions of workers, technicians, engineers, and office employees.

d. A study of the experiences of other enterprises from which helpful ideas may be gained.

Summarizing the above points, the procedure for formulating plans for an industrial enterprise is as follows:

a. Consider the experience of the preceding period, analyze, evaluate, revise and prepare a summary with new targets.

b. Have a discussion of this summary statement by all parties concerned, including representatives of the workers, and prepare a provisional plan for submission to the higher levels.

c. When the higher levels have examined and approved this provisional plan, it then has the effect of law. Thereafter, all in the enterprise must undertake to complete or surpass this approved plan.

Controlling estimates from higher levels deal with the following matters:

a. Quantity of over-all production expressed in terms of the prices at which goods leave the factory

b. Quantity of commercially marketable goods expressed in the same terms

c. Quantity to be produced of each particular kind of goods

d. Major repairs

e. New capital construction

f. Number of workers and the working rate

g. Total amount of the payroll

h. Guaranteed quality of the fuels, raw materials and semiprocessed materials

i. Estimated budget of receipts and disbursements

j. Ratio of reduction of costs

k. Amount of net gain

The size or capacity of all of the departments of the enterprise should be in balance, each with the other; hence all should be a party to the planning.

The quota system has evolved from quotas based on past experience to quotas based on technical economics. The former is unscientific, since it depends on inert records without analysis or technical basis. The latter is based on a combination of technical considerations, economic analysis, and statistical records, and hence is more scientific.

Work quotas are of several sorts, such as:

a. As to the quantity to be produced within a certain time.

b. As to the standard of quality of products.

c. As to time, i.e., the period of time allowed for the completion of a certain task, such as for one tractor.

d. As to consumption, either as to quantity of materials used, or as to the production-consumption ratio.

e. As to the number of employees. This concerns such considerations as the physical competence and technical skills of workers of different kinds to operate a specified number and kind of tools or machines, and the proportion of one kind or grade of employees to another.

f. The rate of depreciation. The formula presently in use for determining depreciation is as follows. The rate of depreciation equals the full replacement value of the fixed capital asset minus the proceeds obtainable from salvage plus the expense of dismantling and removal plus major repair expenses divided by the full replacement value of the asset times the number of years in estimated life of the property.

In setting a quota for quantity or quality, the figure adopted should be what is called the upper average quota. It should be somewhere between the low standard of the past or present and the high standard of exceptionally able workers, such as Stakhanov. It should not be determined merely by the arithmetical average of the performance of all the workers; rather, it should be the average of the performance of the more advanced workers. Hence it is called the upper average quota. To illustrate:

Suppose the production data of a certain factory are as indicated below:

	Jan	Feb	Mar	Apr	May	Jun
Man-hours of labor	7600	7800	8000	8500	8000	7900
Output in tons	3500	4200	4600	5600	5200	5100
Hours used per unit	2.171	1.857	1.739	1.518	1.538	1.548

The arithmetical average of the above hours per unit is 1.729 hours. The low hour per unit figures represent the best performance. The average of the three figures which are below the arithmetical average is 1.535 hours. It is this figure, 1.535, which would be the upper average quota. The above example is intended merely to illustrate the principle involved. In actual practice, certain other considerations must be taken into account. A mechanical conformity to a formula should not be permitted to take the place of, or exclude, the findings of economic analysis.

C. Plans Pertaining to Production

1. Production is intended to include both articles or goods that are made or produced and services of an industrial nature that are performed apart from those involved in the manufacturing process. The latter refers to such things as repairs, capital construction, installations, supply of heat, light, water or power, etc.

2. The correct viewpoint from which to formulate plans pertaining to production is the socialist viewpoint which imposes two considerations:

a. The plans should accord with the economic needs of the country as indicated by the higher authorities;

b. They should provide for a continuous increase in the rate of productive development.

3. The components and procedures of production plans are as below:

Components:

a. Plans as to quantities of products.

b. Plans as to technical organization and processes.

c. Calculations and plans as to equipment, space, and power required.

Order in which quotas should be settled:

a. Kind, quality and number of items to be produced

b. Working hours (number of shifts, etc.)

c. Construction and repair work

d. Use of equipment, machinery

e. Materials, fuel, power, man-hours required

Calculations to be made on basis of above quotas:

a. Capacity of utilization of equipment

b. Volume of output

c. Work output for construction, installations, repairs, and for end products

Plans concerning the quantity of goods to be produced.

Plans concerning technical organization and processes.

Calculation of the actual and potential productive capacity of the mechanical equipment.

D. Plans Pertaining to Supply of Materials

These plans must take into account the rate of marketing of the products, for this has a bearing on the turnover of working capital funds and the rate at which raw materials will be needed. In a country operating on a planned economy, this matter is of considerable importance. One reason for this is that if the supply of materials, whether raw materials or finished products, is not properly scheduled and the schedule strictly adhered to, some factory or consumer will inevitably be disappointed and hindered for lack of materials. The plans should indicate such details as the intended sources of supplies, and the rate of needed deliveries. The different requirements for which planning must make provision are principal raw materials, secondary materials, miscellaneous supplies, fuel, electricity, materials needed for construction and repairs, and sundry articles. The quantities needed of each kind should be calculated in detail, based, for instance, on such factors as the amount of iron, brass, copper, rubber, insulated wire, bolts and screws, etc., needed for each motor that is to be manufactured. Similarly, the amount of electricity required for power and light should be calculated in detail, based on the degree of illumination, working hours, season of the year, power required for operating each machine tool, and number of machines.

E. Plans Relating to Labor

The most important questions that must be resolved are labor's rate of production, the number of workmen to be employed, the wage level, and the total amount of the payroll.

To systematically raise labor's rate of production is the duty of the planners. Such a methodical increase in labor's rate of production is only possible in a socialized democracy. The measurement of the rate of production may be made (a) by the quantity of the product, (b) by money value of the product, (c) by percentage of the work quotas accomplished, or, as in the case of large-scale production by machinery, by measuring the number of man-hours required for the completion of some definite unit of goods.

With regard to the wage level, one of the main guiding principles is the rule that remuneration should be proportional to labor. The determination of the rate of pay should take both quantity and quality (skill) into account. One wage system is the piecework system; another system is one that is based on the time worked and the degree of the worker's skill or ability. The latter system is adopted when the former is not practicable. Payment on the time-worked basis may be reckoned by the hour, day, or month. In China, under present conditions, payment by the month is most prevalent. As to skill or ability, the workers are classified into eight classes or grades, the highest grade being a grade 1 workman, and the lowest grade being a grade 8 workman, with a range of pay gauged by coefficients ranging from 1.0 for the lowest grade worker to some other figure for the highest grade worker. The following table illustrates the wage coefficients for the different grades of workmen for two ranges of coefficients, one being from 1.0 to 3.6, and the other from 1.0 to 3.2.

Grades of Workmen

	1	2	3	4	5	6	7	8
Coefficient	3.6	3.0	2.5	2.1	1.75	1.45	1.20	1.0
Coefficient	3.2	2.71	2.29	1.94	1.64	1.39	1.18	1.0

In the machine shops, the standard unit wage for grade 8 workmen is 1500 yuan per hour. Where the former range of coefficients is in effect, the hourly wage of a grade 1 workman would be 1500 times 3.6, or 5400 yuan.

The Northeast government has classified the various occupations into five categories as to their importance in the national economy, their function, the intricacy of the technical equipment employed, their arduousness, and their effect on the health and safety of the workers. The occupational categories are as follows:

First category -- coal mining, smelting, and similar industries.

Second category -- metallic ore mining, petroleum production, electric power industry, and chemical industries working with sulfuric, nitric and hydrochloric acids.

Third category -- manufacture of machinery and electrical apparatus, vehicles, and construction materials, and chemical industries in general.

Fourth category -- the textile, paper, and tanning industries.

Fifth category -- industries pertaining to clothing and bedding, furs and hides, processing of cereals and foodstuffs in general, tobacco, soap and matches.

In the graded wage-scale system, the coefficients for the respective grades of workmen, within the range that has been adopted, are determined by two methods. The first method may be called the method of cumulative progression, i.e., the differential between any two consecutive grades varies being least at the lower end of the scale and increasing toward the higher end of the scale. The following table shows in one line the coefficients for each grade of workmen through a range of from 1.0 to 3.0, and in the line below, the increasing differential. This range of coefficients and cumulative progression method of determining the intermediate differentials applies to all occupations in categories 1, 2, and 3.

Grades of Workmen

	1	2	3	4	5	6	7	8
Coefficients	3.00	2.55	2.17	1.85	1.58	1.35	1.16	1.00
Differential ratios	17.65	17.51	17.30	17.09	17.04	16.38	16.00	-

The second method is a modified cumulative progression method, where the differential ratio is taken as 16 percent, and, beginning with 1.0 as a base, this ratio is maintained throughout the series, resulting in the highest coefficient of 2.84. This scale of wages is illustrated in the table below. It applies to occupations in categories 4 and 5.

Grades of Workmen

	1	2	3	4	5	6	7	8
Coefficients	2.84	2.44	2.10	1.81	1.56	1.35	1.16	1.00
Differential ratios	16	16	16	16	16	16	16	-

The base pay for a grade 8 workman, in a category No 1 occupation, such as coal mining, is 105 "fen". The pay of a grade 4 workman would be 105 times 1.85 equals 194 "fen".

The base pay for a grade 8 workman in a category No 4 occupation, such as textiles, is 88 "fen". The pay of a grade 1 workman would be 88 times 2.84 equals 250 "fen". [The term "fen", as used here, is a unit of economic value devised and determined by the government to circumvent the fluctuation in value of the currency, which is based on the value of a number of articles of every day life such as one bag of flour, 10 meters of cloth, one kilogram of salt, one kilogram of edible oil, etc.]

If a wage scale has been adopted, the total amount of the payroll can be calculated, and with that, it is possible to ascertain what percentage the payroll is of the total cost of the product.

According to the elucidation by the Finance and Economic Committee of the Government Administrative Council of the term "total amount of payroll," its calculation should include the following items for all the employees on the payroll:

1. All wages paid directly for labor performed on the time basis, according to the wage scale.

2. All wages paid for piecework labor.

3. Awards or bonuses for quality, economy, or other consideration.

4. Percentages [of gross receipts] shared among the workers; or commissions (applicable in businesses not using wage scales).

5. Cost of forms of reward other than those mentioned in item 3, such as vacation expenses or attendance at a convention, in recognition of good performance.

6. Extra pay given in consideration of special living conditions, unhealthy or dangerous conditions of labor, such as in match factories or chemical plants.

7. Cost of other forms of compensation, such as allowances for housing, food and other living expenses, when paid directly to the workers. This item does not include expenses to the company of free company-housing or free water supply when there is no direct payment to the workers.

8. Supplementary wages or salaries paid to persons not directly engaged in production.

The payroll should not include the following items:

1. Single payments of costs of inventions, technical improvements, rational suggestions, and expenses of propaganda movements to increase production.

2. Reserve funds set aside for labor insurance, operating expenses of labor unions, unemployment compensation.

3. Traveling expenses of groups of laborers transferred to different work sites, and expenses incidental to transfers.

4. Expenses incidental to termination of employment.

When the total payroll costs have been determined, it is possible to make computations as to average wage per hour, per day, per month, per quarter, or per year. The average wage per unit of time, or per piece, or other quantity, is of great importance for several reasons, particularly for cost accounting and financial planning. The wage level in China is constantly rising. In 1949, the wage level was 27 percent higher than in 1948; in 1950 it was 12.5 percent higher than in 1949; and in 1951, it was 15 percent higher than in 1950. However, the system of different rates of pay for different kinds of occupations and for different degrees of experience and skill should be preserved.

F. Planning Costs

The principal items in the cost plans are as follows:

1. Raw materials, and other main supplies;
2. Secondary or accessory materials or articles;
3. Fuel, whether used in the production process or for generating power;
4. Motive power purchased from outside;
5. Salaries and wages;
6. Adjunctive payroll costs;
7. Depreciation, reckoned according to the rules of the Ministry of Finance. All property having a value of at least 2 million yuan and intended for use for at least one year, should be considered as fixed capital and subject to depreciation charges.

8. Other expenses, not chargeable under the above headings, such as insurance, rent of buildings, postage and telegraph charges.

The following items should be added to or deducted from the production cost figures:

1. Deduct the value of discarded material, or scrap.
2. Deduct cost of activities not directly incurred in connection with the production of products.
3. Add amounts expended during the preceding period on account of this period.
4. Deduct amounts expended this period on account of the next ensuing period.

Factories include production costs, management costs and selling costs.

The chief ways to reduce production costs are:

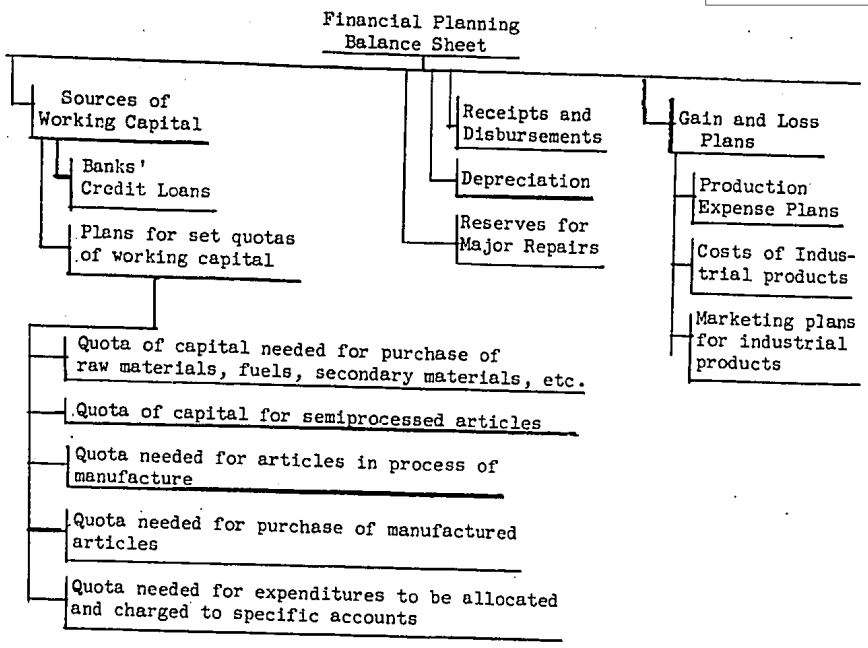
1. Increase and improve the use of fixed capital;
2. Economize on materials and expenses;
3. Reduce management costs and nonproductive expenses;
4. Raise wage level and thus increase labor productivity;
5. Improve labor coordination and organization of processes;
6. Make greater use of machinery and depend less on human labor.

G. Financial Planning

The principal document used in financial planning is the Receipts and Disbursements Balance Sheet. It should embrace the findings of all subsidiary calculations, so as to have them available for analysis. It is indispensible as a basis for decisions of the utmost importance. The three principal components of the Balance Sheet are:

1. Working capital; sources and quotas.
2. Fixed capital; buildings, installations, equipment.
3. Gain and Loss plans.

For more detailed indication of it constituents, see the following chart.



Working capital is needed for four main purposes:

1. Capital that is held in reserve for production. This for the purpose of meeting the cost of materials and supplies, which usually constitutes about 60 percent of this category. Coal mines and oil-well enterprises do not have to buy raw materials.

2. Capital that is to be used on unfinished products in process. This is needed in connection with such work as shipbuilding which requires a long period for completion before the ship can be sold and yield income.

3. Capital that is used in connection with finished products. This is frequently needed in a business of a seasonal nature, where stocks of finished goods have to be held for several weeks or months before selling.

4. Capital needed for purposes other than the three mentioned above. In this category are such items as cash in hand for current use, and money for payments that must be made in advance.

Working capital may be of two kinds: (a) the company's own funds (hereinafter referred to as company funds), and (b) borrowed funds. In the case of a state-owned enterprise, the company funds portion of its working capital is that given to it by the government on a long or indefinite basis, and for which, within the limits of legality, the company has full freedom of use and full responsibility, the same as for its other property. The amount of company funds is determined in the light of certain considerations that will be indicated below.

The sources of borrowed capital are mainly loans from government banks, but they may include funds used as working capital which are legally received in advance, or held for deferred payments, in accordance with the terms of some contract or agreement. They may be used in the same way as company funds, but it must be remembered that they are really of the nature of borrowed funds; by some people they are referred to as quasi-company funds. On a statement of assets and liabilities, they are classified as fixed charge indebtedness. Their elements, as ruled by the government Board of Estimates, may include wages payable, guarantee funds that have been received, deferred payments on bills payable, deferred payment of taxes, and money received in advance to bind a bargain.

Borrowed funds, mainly credit loans from a government bank, may be divided into five categories:

1. Ordinary fixed amount credit loans. The amount is set at a certain proportion, approved by the government Board of Estimates, of the requirements of working capital needed by the company in the light of the nature and volume of its business. Usually the proportion is 90 percent, leaving the 10 percent balance to be arranged, if necessary, with the banks on other than a credit loan basis.

2. Seasonal credit loans.

3. Short-term credit loans to help finance goods whose movement is sluggish.

4. Credit loans in excess of ordinary fixed amount loans, needed because of such reasons as slow turnover of capital due to transportation delays, or overstocking of raw materials. Such extra credit loans may be negotiated if approved by higher councils.

5. Credit loans of other types, such as might be needed to cover unanticipated expenses for repairs or replacements.

The determination of the amount of working capital needed will now be discussed. Working capital is indispensible, but the amount should be neither too small nor too large. Therefore a certain order of procedure should be followed in making the calculations before a decision is reached. This is what is referred to when the term fixed amount of working capital is used. The items that need to be taken into account are as follows: raw materials and other important materials; accessory materials; fuel; packing materials; goods in process of production; company-made semifinished articles; finished products; sundry "parts"; low-priced materials or articles and those that deteriorate rapidly or are fragile, like glassware; and expenses to be allocated. Under this last heading are such items as expense of research and improvements that should be prorated as future charges; advance payment of taxes or transportation costs; marketing costs, such as advertising, office supply stocks, and others.

For an expanding industry, the amount of working capital needed should be estimated for each quarter and so provided, rather than to take an average for the whole year; or else, take as the fixed amount of working capital the sum needed for the smallest quarter, and provide for the larger quarters by means of seasonal increments.

The formula now sanctioned for use in calculating the depreciation rate of fixed capital is as follows: the rate of depreciation equals the full replacement value of the fixed capital asset minus the proceeds obtainable from salvage plus the expense of dismantling and removal plus major repair expenses divided by the full replacement value of the asset times the number of years in estimated life of the property.

The value of the fixed capital can be regarded as either the original cost or value, or the present replacement value or cost. The government has ordered that for the value of the fixed capital the present replacement value or cost should be used in the formula when calculating rate of depreciation. This has two advantages. One is that the rate will be the same for both older and newer equipment and it makes replacement easier; the other advantage is that it facilitates calculations concerning the degree of depreciation and the amount of funds estimated to be required for replacement at any given time.

H. Planning Capital Construction

In a socialist country, or one based on the principles of the New Democracy, the objectives in the matter of capital construction are different from those in capitalistic countries. In the latter, the main considerations are profit, degree of risk, and possibility of investment recovery. In China, the main objectives should be as follows:

1. The rational development of productive capacity, so as to safeguard the national economy and lead to the balanced development of agriculture, industry, and transportation.

2. The balanced development of steel production, factories manufacturing machinery, and other steel-consuming industries.

3. The optimum diversification of industries and their proper geographical distribution throughout the country, instead of having 70 percent of them concentrated near the seacoast, as was the case during the period of China's semicolonial status. It is also desirable that industrial plants be located near the sources of raw materials and also near the principal markets.

4. The economic development of the minority nationalities.

5. The strengthening of the national defense, and the raising of the people's material and cultural levels.

There are three sorts of capital construction -- new construction, expansion or improvement, and restoration. From the relative amounts of funds appropriated for various projects, there may be discerned the trend of development from emphasis on restoration to emphasis on reconstruction and expansion, with relative importance attached to developments in the fields of industry, public utilities, housing, public health, and culture.

Capital construction projects are divided into two main categories. The first comprises those whose planned total investment is below a set quota or ceiling. Official agencies on or below the level of a ministry of the central government are authorized to handle such projects. The other category comprises projects whose planned total investment is above the ceiling adopted for the first category. Authority to handle these projects is reserved to the Government Administration Council and its Finance and Economic Committee. For projects in the first category, the ceiling set for a capital construction project in the field of heavy industry is 50 billion yuan; of machinery manufacturing, 30 billion yuan; of light industry, 15 billion yuan; of flour milling, 5 billion yuan; of textile plants, 30 billion yuan.

The various procedures for the examination and approval of plans for capital construction projects have been laid down in Article 15 of the "Provisional Measures for Capital Construction Work," issued by the Government Administration Council's Committee of Financial and Economic Affairs on 9 January

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The construction costs of a project and the investment in a project are not the same thing, and they should not be confused. The former pertains to construction only, while the latter, besides construction, includes the purchase and installation of equipment and furnishings. Capital construction may be broken down into the following components:

1. Engineering structures
2. Engineering installations
3. Permanent machine installations
4. Non-fixed machine installations
5. Tools, apparatus and instruments
6. Investigations, surveys, research and operational planning and other work pertaining to basic construction

I. Inspection and Supervision of the Execution of the Project

Once approved, plans have the force of law and must be adhered to strictly, whatever the difficulties. Nevertheless, it is to be expected that problems will be encountered in the course of construction, and modifications of the plans may have to be made to meet the situation, but only upon formal sanction by the proper authorities. Provision must be made for continual supervision of the management of the funds and inspection of materials and workmanship to insure that the project is brought to a successful completion.

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